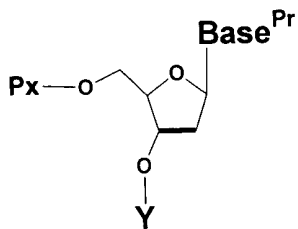
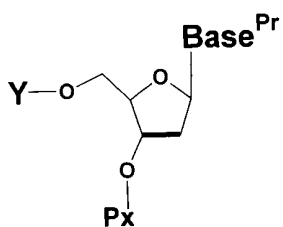


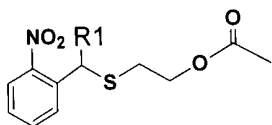
Figure 1



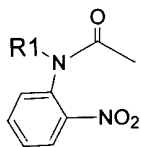
Px = phosphoramidite, H-phosphonate, phosphate triester

Y = general structures (R1 = H, alkyl, aryl)

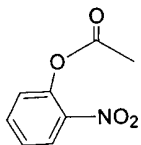
o-nitrobenzylthioethoxycarbonyl NBTEOC:



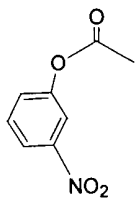
o-nitrophenylaminocarbonyl NPAC



o-nitrophenoxycarbonyl N2POC



m-nitrophenoxycarbonyl N3POC



o-nitrophenylthioethoxycarbonyl

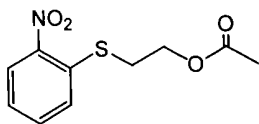
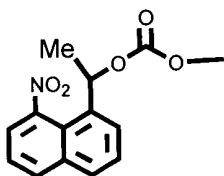
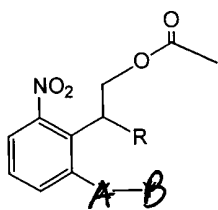


Figure 1 (a)

α -methyl-8-nitronaphthylmethoxycarbonyl MeNMOC

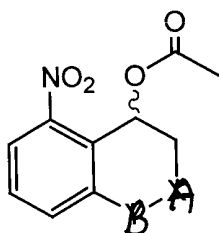


6-substituted 2-(o-nitrophenyl)-2-propyloxycarbonyl 6NPPOC



A = O, S, N-alkyl, N-aryl, (CH₂)_n, where n = 0 - ~3
B = aprotic weakly basic group - eg.: N-alkylimidazole)

cyclic o-nitrobenzyloxycarbonyl



Specific examples tested...

Figure 2

TEMPOC

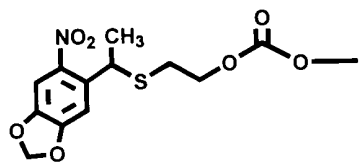
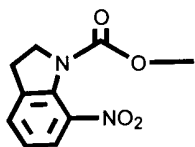
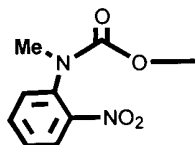


Figure 2 (cont'd)

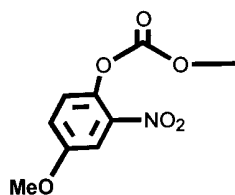
NIOC



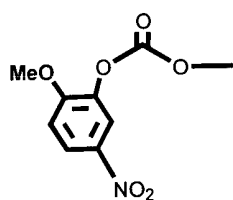
NAMOC



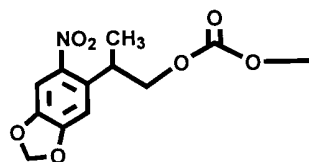
MeN2POC



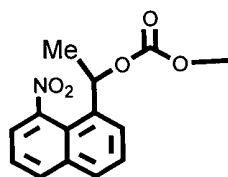
MeN3POC



NP2POC



NNEOC



1007160 " 66565960

Figure 2 (cont'd)

Coupling Efficiency Data

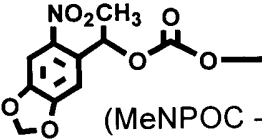
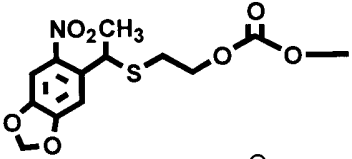
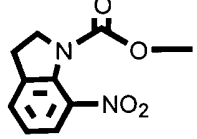
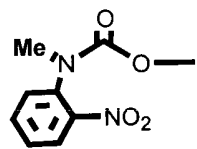
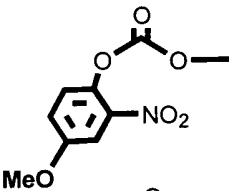
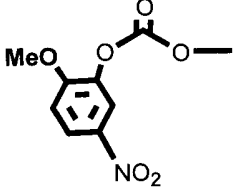
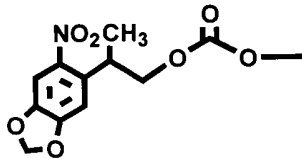
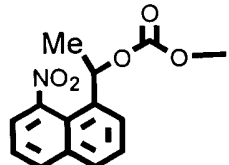
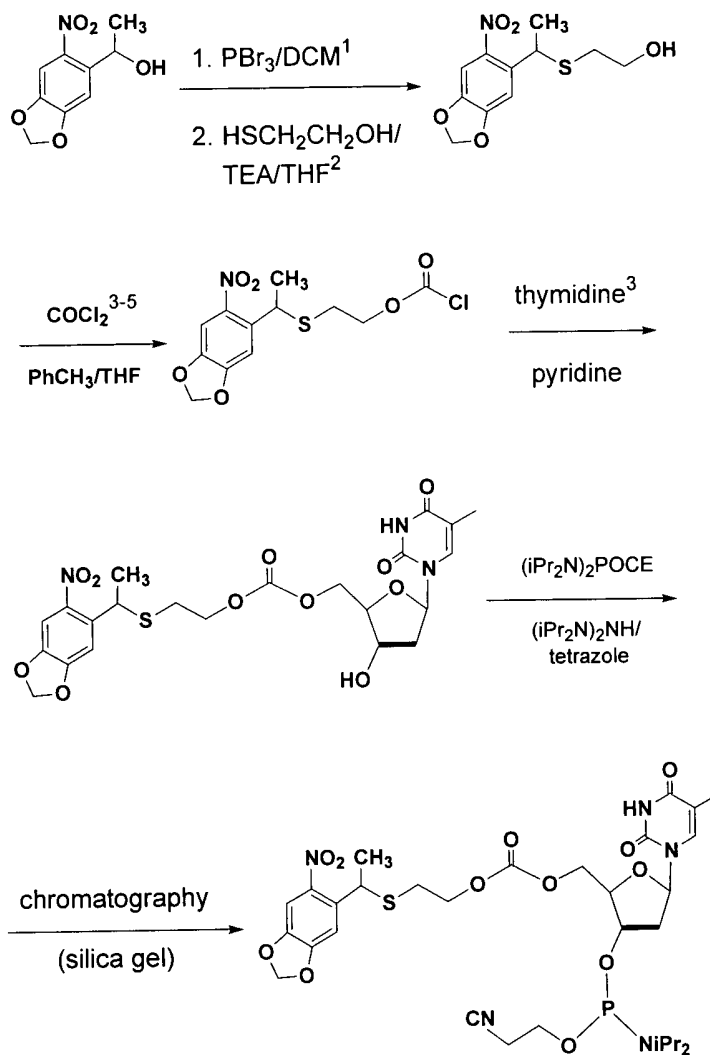
Y =	stepwise yield	photolysis conditions
 (MeNPOC - control)	~88 %	nonpolar solvent
	~85 %	MeOH
	95%	DMSO
	94%	nucleophilic solvent (MeOH)
	~80%	nucleophilic solvent (MeOH)
	~75 %	nucleophilic solvent (MeOH)
	90 %	basic solvent (1%NMI/DMSO)
	96 %	DMSO

Figure 3

5'-TEMPOC-T-Phosphoramidite



1 Dyer, et al. JOC 64: 7988 (1999)

2 Tetrahedron Lett., 38(52), 8933-4 (1997)

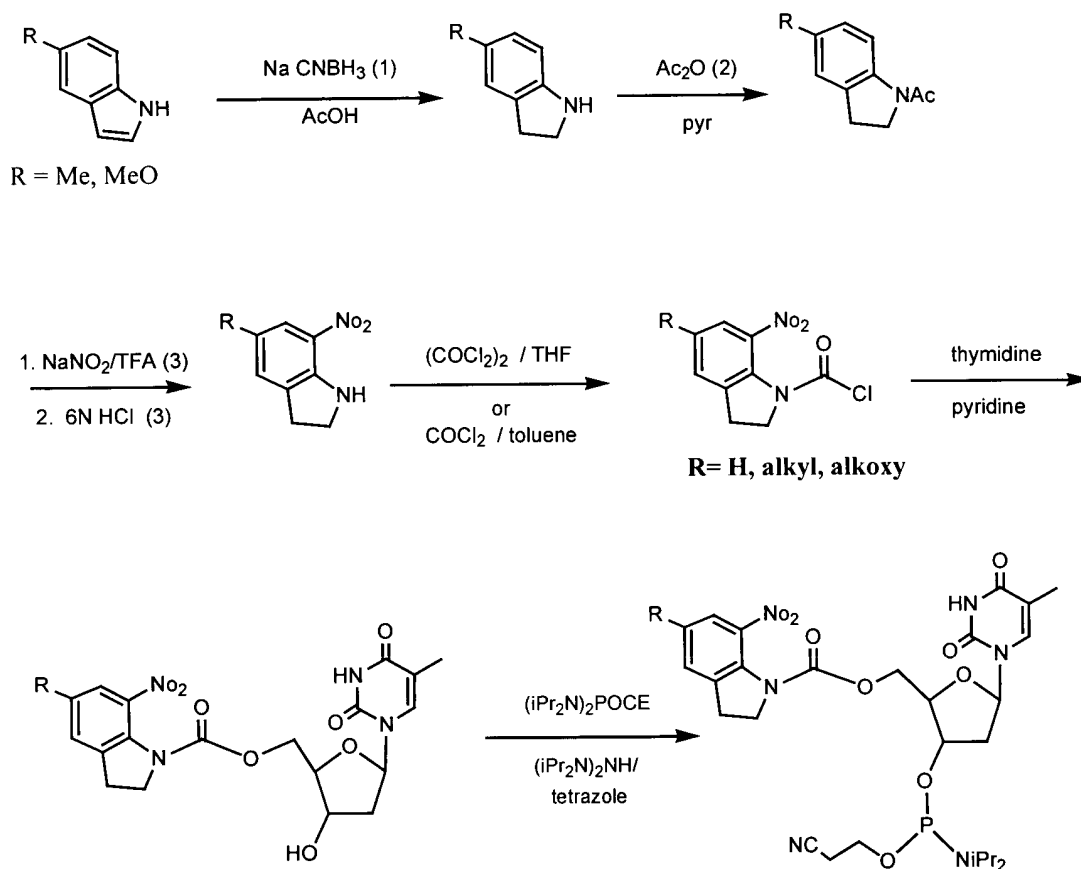
3 McGall, et al. JACS 119: 5081 (1997)

4 triphosgene may work equally well for this step.

5 chloroformate can probably be used without purification.

Figure 4

Synthesis of NINOC-T-CEP



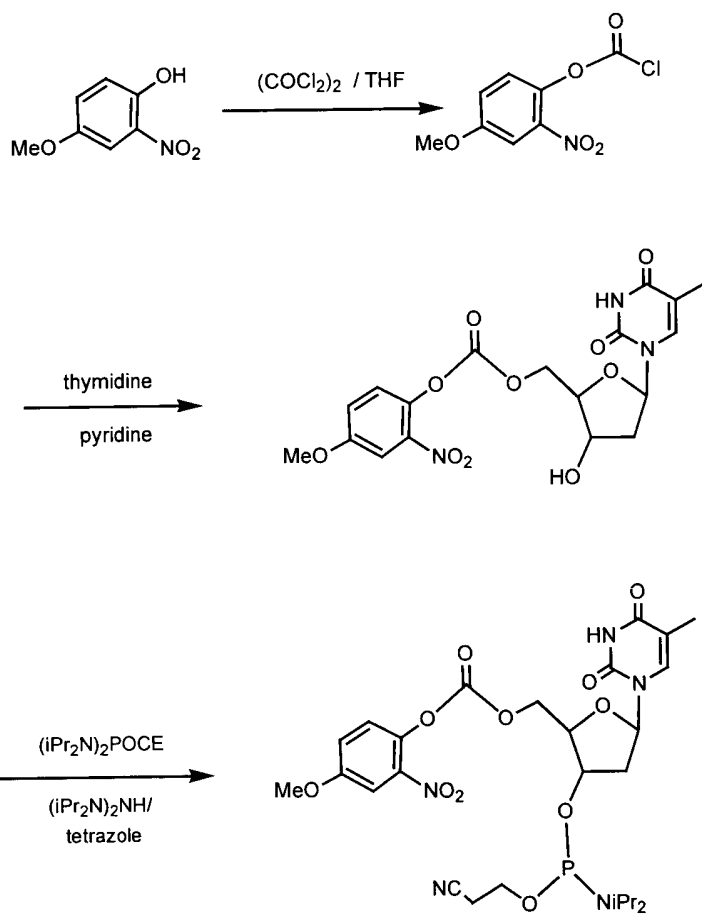
(1) Bromidge, et al. (1998) *J. Med. Chem.* **41**: 1598.

(2) (i) Brooker, LS, et al. (1953) *US Pat.* 2,646,430; (ii) Boekelheide, et al. (1954) *J. Org. Chem.* **19**: 504.; (iii) Bennet, et al (1941) *J. Chem. Soc.* **74**: 244.

(3) Mortensen, et al. (1996) *Org. Prep. Proc. Int.* **28**: 123.

Figure 5

Me2NPOC-T-CEP



Variable	Mean	SD	Min	Max
Age	34.5	10.2	22	55
Gender	Male	Female		
Marital status	Married	Single		
Education	High school	College		
Occupation	Manager	Worker		
Income	Low	High		
Health status	Good	Poor		
Smoking status	Smoker	Non-smoker		
Alcohol consumption	Regular	Occasional		
Exercise frequency	Regular	Occasional		
Stress level	Low	High		
Sleep quality	Good	Poor		
Dietary habits	Healthy	Unhealthy		
Family size	Small	Large		
Work-life balance	Good	Poor		
Life satisfaction	High	Low		
Overall well-being	Good	Poor		

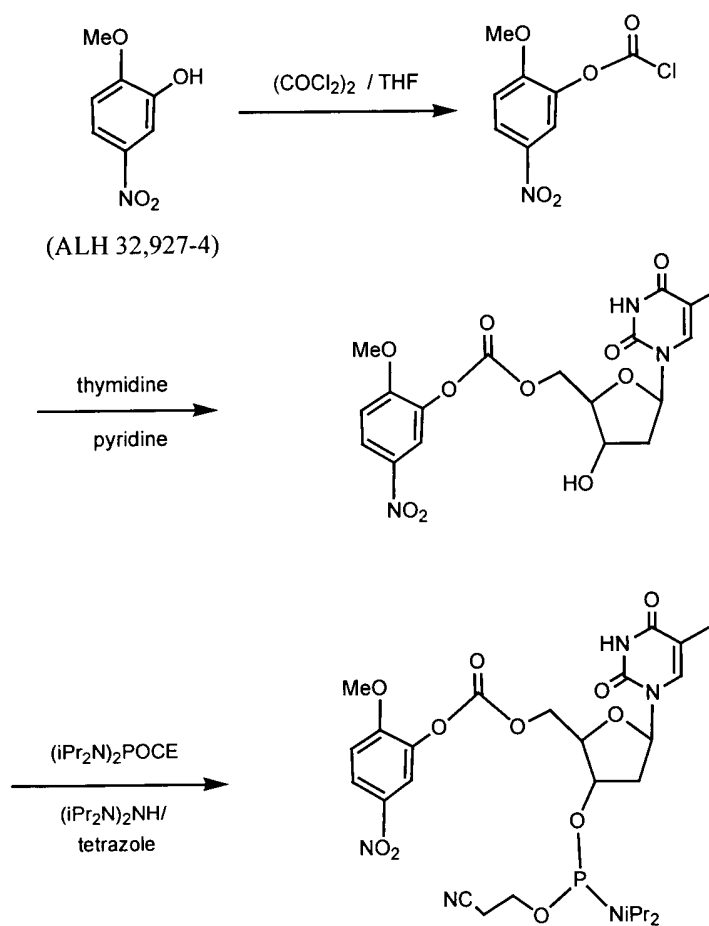
Me₃NPOC-T-CEP

Figure 7

NP2POC-T-CEP

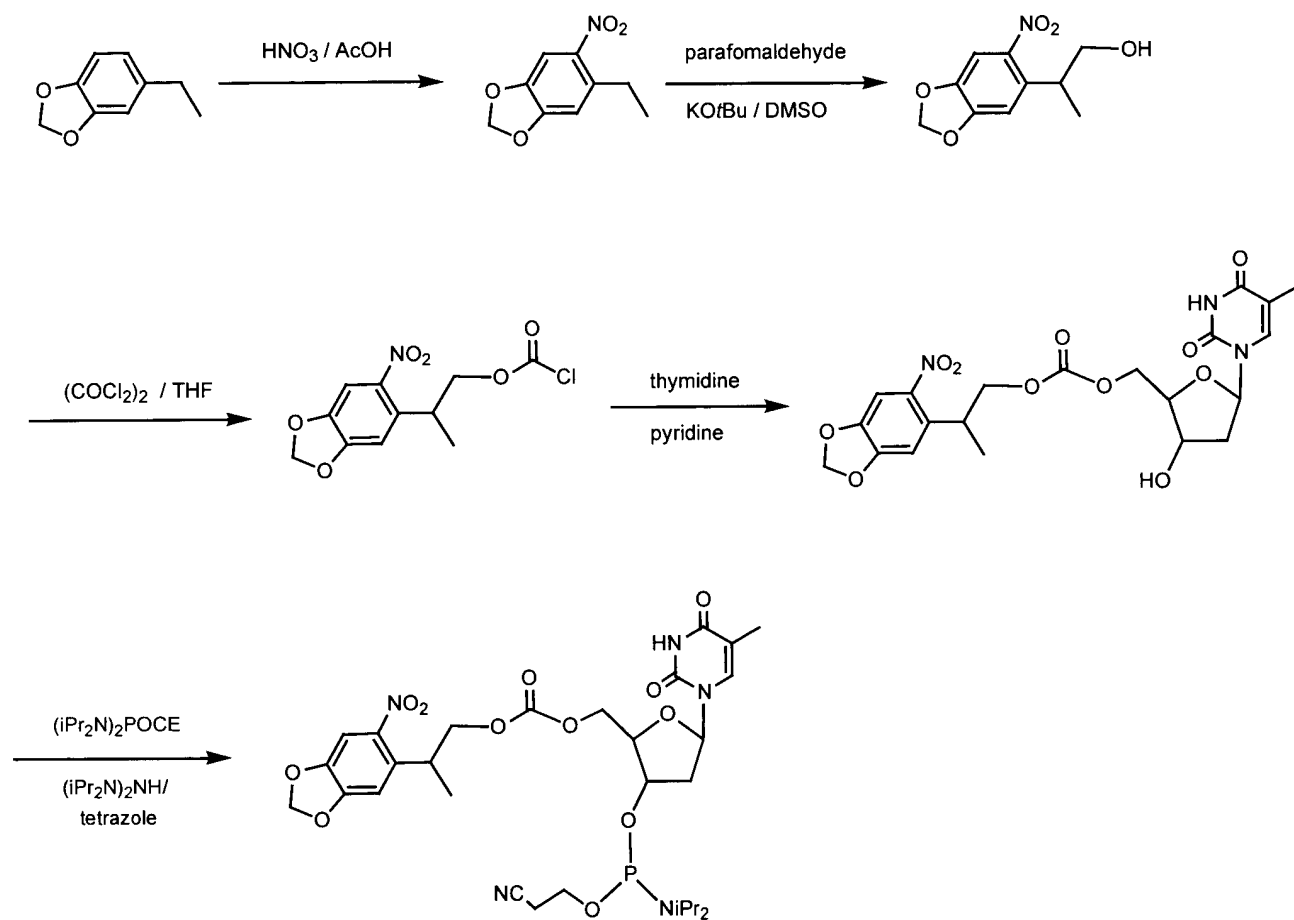
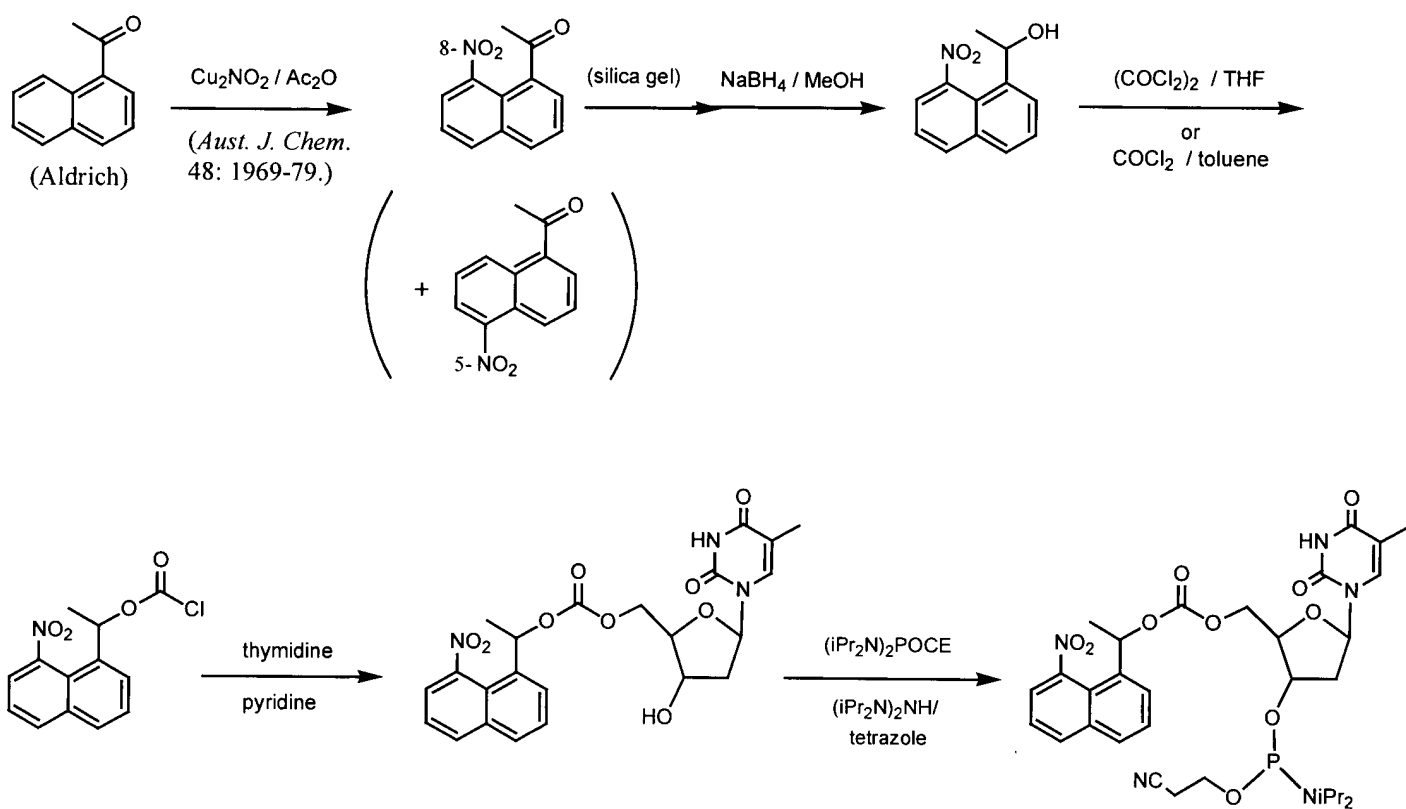


Figure 8

NNEOC-T-CEP



CC(C)C1=CC=C2C(=C1)C(=C(C=C2)C(=O)O)C1=CC=C(C=C1)[N+](=O)[O-]